

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A semiconductor manufacturing apparatus comprising:
 - a plurality of vacuum chambers corresponding to a plurality of processing sections necessary for manufacturing a semiconductor device;
 - an exhaust device connected to each vacuum chamber;
 - a plate shaped guide plate arranged at the bottom of each vacuum chamber and having a plurality of gas emission holes;
 - a gas supply source for supplying gas to the gas emission holes ;
 - a shutter located between each adjacent pair of vacuum chambers;
 - a tray mounted on the guide plate of one of the vacuum chambers for receiving a substrate which is to be processed in the vacuum chambers, wherein the tray includes a plurality of engagement parts arranged along a moving direction of the tray, and wherein each engagement part is one of a recess and a projection;
 - a conveying function section having a conveying arm that contacts the engagement parts of the tray, individually and detachably, to move the tray from a first vacuum chamber to a second adjacent vacuum chamber along the guide plates in the first and second vacuum chambers; and
 - a controlling function section, the controlling function section performing the control so as to open the shutter between the first and second vacuum chambers, emit gas from the gas emission holes of the guide plates in the first and second vacuum chambers, and move the tray in one vacuum chamber, which is floated by the emitted gas, from the guide plate of one vacuum chamber to the guide plate of the other vacuum chamber along the guide plates by means of the conveying arm.

2. (Original) The manufacturing apparatus according to claim 1, wherein the controlling function section has an operation controlling section for performing operation control of the conveying arm and the shutter, and a pressure controlling function section for performing pressure control of each vacuum chamber, the pressure controlling function section includes a configuration of including a pressure adjusting gas supply source for supplying pressure adjusting gas to each vacuum chamber, a pressure detecting part for detecting the pressure in each vacuum chamber, an adjustment valve for adjusting the exhausting amount from each vacuum chamber, and a pressure controlling section for controlling the adjustment valve so as to adjust the pressure of each vacuum chamber when input with a signal from the pressure detecting part.

3. (Previously Presented) The manufacturing apparatus according to claim 1, wherein the tray includes a locking part for holding the tray on the guide plates when the tray is being moved by the conveying arm.

4. (Previously Presented) The manufacturing apparatus according to claim 1, wherein the conveying function section further includes a drive section for moving the conveying arm, the drive section comprising a pair of pulleys and a wire wound around the pair of pulleys.

5. (Original) The manufacturing apparatus according to claim 4, wherein the drive section include a tensile force adjustment mechanism for maintaining the tensile force of the wire constant.

6. (Previously Presented) The manufacturing apparatus according to claim 4, wherein the conveying arm is fastened at one point on the wire, the moving distance of the conveying arm and the moving distance of the one point on the wire are the same when the wire is moved by the pair of pulleys.

7. (Previously Presented) The manufacturing apparatus according to claim 1, wherein the tray is grounded on at least one of the guide plates when the emission of gas from the gas emission holes stops.

8-27. (Canceled)

28. (Currently Amended) The manufacturing apparatus according to claim 27 1, wherein ~~the engagement unit includes first and second engagement parts which are arranged at predetermined intervals along the moving direction of the tray, wherein the conveying arm engages at the first engagement part of the tray to cause the tray to move partway to a target position, and wherein the conveying arm releases the first engagement part and engages at the second engagement part of the tray to move the tray to the target position.~~

29. (Previously Presented) The manufacturing apparatus according to claim 28, wherein the emission of gas from the gas emission holes is interrupted from the time the conveying arm releases the engagement with the first engagement part until the conveying arm engages the second engagement part, and the tray is grounded and positioned on at least one of the guide plates while the emission of the gas is interrupted.

30. (Previously Presented) The manufacturing apparatus according to claim 28, wherein the first engagement part is positioned at a first end of the tray in the moving direction of the tray.

31. (Currently Amended) The manufacturing apparatus according to claim 1, wherein a mechanism for moving the conveying arm is provided within only one of the first and second adjacent vacuum chambers and the conveying arm is configured so as to move the tray within one vacuum chamber to the other adjacent vacuum chamber.

32. (Previously Presented) The manufacturing apparatus according to claim 1, wherein the conveying arm is configured to move the tray from a position entirely within one vacuum chamber to a position entirely within the adjacent vacuum chamber.

33. (Previously Presented) The manufacturing apparatus according to claim 1, wherein the conveying arm includes a tray contact portion to be in contact with the tray, and the conveying arm is configured so as to move the tray so that the tray contact portion pushes the rear end of the tray in the moving direction of the tray.

34. (Previously Presented) The manufacturing apparatus according to claim 1, wherein the conveying arm includes a tray contact portion to be in contact with the tray, and the conveying arm is configured so that the tray contact portion is able to move from one vacuum chamber into the other adjacent vacuum chamber.

35. (New) A semiconductor manufacturing apparatus comprising:
a plurality of vacuum chambers corresponding to a plurality of processing sections necessary for manufacturing a semiconductor device;
an exhaust device connected to each vacuum chamber;
a plate shaped guide plate arranged at the bottom of each vacuum chamber and having a plurality of gas emission holes;
a gas supply source for supplying gas to the gas emission holes ;
a shutter located between each adjacent pair of vacuum chambers;
a tray mounted on the guide plate of one of the vacuum chambers for receiving a substrate which is to be processed in the vacuum chambers;
a conveying function section having a conveying arm that contacts the tray to move the tray from a first vacuum chamber to a second adjacent vacuum chamber along the guide plates in the first and second vacuum chambers, wherein a range of movement of the conveying arm is smaller than a distance that the tray must travel to move from the first vacuum chamber to the second adjacent vacuum chamber; and

a controlling function section, the controlling function section performing the control so as to open the shutter between the first and second vacuum chambers, emit gas from the gas emission holes of the guide plates in the first and second vacuum chambers, and cause the conveying mechanism to move the tray from the first vacuum chamber into the second adjacent vacuum chamber by means of the conveying arm.

36. (New) The manufacturing apparatus according to claim 35, wherein a mechanism for moving the conveying arm is provided within only one of the first and second adjacent vacuum chambers.

37. (New) The manufacturing apparatus according to claim 35, wherein the conveying arm engages a first portion of the tray to cause the tray to move partway from the first vacuum chamber into the second adjacent vacuum chamber, and wherein the conveying arm releases the first portion of the tray and engages a second portion of the tray to move the tray fully into the second adjacent vacuum chamber.

38. (New) A semiconductor manufacturing apparatus comprising:
a plurality of vacuum chambers corresponding to a plurality of processing sections necessary for manufacturing a semiconductor device;
an exhaust device connected to each vacuum chamber;
a plate shaped guide plate arranged at the bottom of each vacuum chamber and having a plurality of gas emission holes;
a gas supply source for supplying gas to the gas emission holes ;
a shutter located between each adjacent pair of vacuum chambers;
a tray mounted on the guide plate of one of the vacuum chambers for receiving a substrate which is to be processed in the vacuum chambers;
a conveying mechanism that includes a conveying arm that contacts the tray to move the tray from a first vacuum chamber to a second adjacent vacuum chamber along the guide plates in the first and second vacuum chambers, and a movement

mechanism that causes the conveying arm to move, wherein the movement mechanism is completely contained within one of the first and second vacuum chambers; and
a controlling function section, the controlling function section performing the control so as to open the shutter between the first and second vacuum chambers, emit gas from the gas emission holes of the guide plates in the first and second vacuum chambers, and cause the conveying mechanism to move the tray from the first vacuum chamber into the second adjacent vacuum chamber by means of the conveying arm.

39. (New) The manufacturing apparatus according to claim 38, wherein the movement mechanism moves an end of the conveying arm back and forth between a first position within the first vacuum chamber and a second position within the second adjacent vacuum chamber.